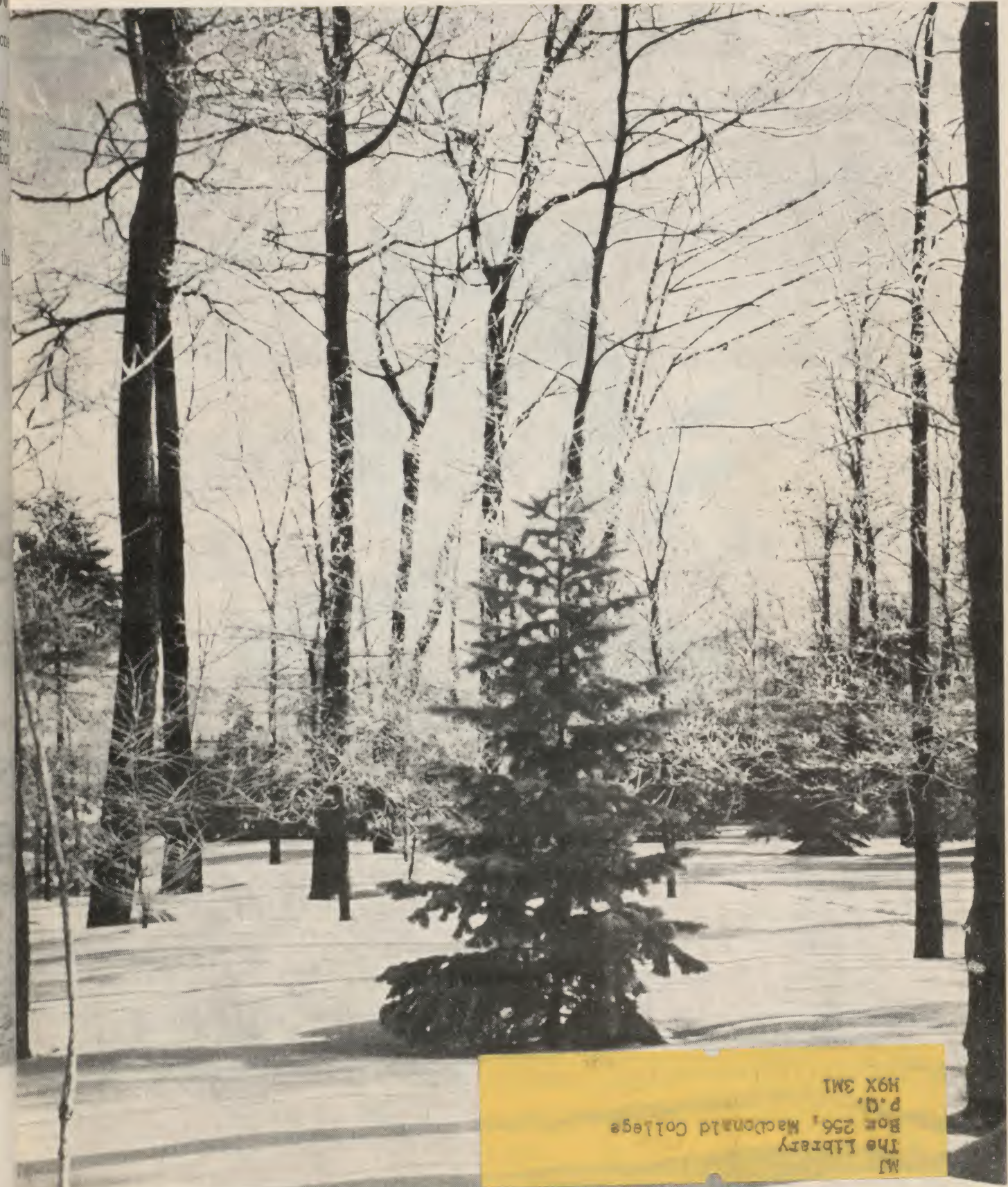


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THE MACDONALD LASSIE

# THE macdonald Journal

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## Journal Jottings

At least two articles in early '73  
Journal issues started off with the  
comment that the most hotly  
discussed subject in agricultural  
circles was feed proteins — their  
cost, their scarcity, and the  
consequent effect on the livestock  
industry. Unfortunately, the  
situation hasn't changed. The  
discussions are still going on  
around farm kitchen tables, at  
farmers' meetings, at Colleges and  
universities, and recently in  
Quebec City where a group of  
experts from around the world  
gathered for a Feed Protein  
Conference. The opening remarks  
by Quebec's Minister of Agriculture,  
Normand Toupin, and the  
deputy Minister, Gaétan Lussier,  
are in the Family Farm section  
of this issue.

Professor Norman Lawson of the  
Agronomy Department was at the  
Conference. His article "The  
Protein Problem" discusses the  
causes for the world-wide short-  
ages and then, crop by crop,  
describes how Quebec might  
become more "self sufficient."  
Now if we could come up with  
our own version of Peruvian  
anchovies we really could be,  
if I may borrow a Quebec slogan,  
"Maîtres Chez Nous."

Think about Professor Lawson's  
closing comments. There have been  
quiet rumblings along these lines  
before; they could become louder  
and more hotly discussed  
sooner than we think.

Hazel M. Clarke



# Editorial

"I'd rather not get mixed up in that kind of work. You can find a better man than me to do that sort of thing."

The reluctance to get involved. It is one of the more serious problems facing our communities today. It isn't a visible sort of problem as are many other problems such as pollution, poor streets, and high tax bills. Its only recognizable characteristic is usually in the form of a casual remark that "there just doesn't seem to be as many things going on."

There just doesn't seem to be the number of people today who are willing to take on the countless jobs that need to be done in order to maintain a vibrant, active community. Twenty years ago there were many people who thought nothing of spending one or two nights a week during the winter or off-season to participate in community and social activities. Now, the few local community leaders find it extremely difficult to get out even a few people in the entire community to help organize some program.

What is the reason for this decline in community interest and involvement? Television is the culprit

that usually receives the lion's share of the blame. Possibly it should. Its popularity does seem to be replacing the church, the club, and the neighbourhood as the prime social and entertainment medium in the community. How many hours last month did you spend watching television as compared to attending some community event?

But I suspect the real culprits are the complaints and lack of cooperation received by those few people who are still interested in seeing good things happen in their communities. A former mayor of a small, rural community once remarked that the greatest problem facing the community is the "dirt" local citizens receive when things don't quite go as expected and the lack of appreciation received when things do. This more than anything else has probably accounted for the increased reluctance to get involved. Nothing will discourage a local organizer more than to put in countless hours of hard work and then get "put down" by someone who hasn't contributed even the slightest interest in his work.

The eventual result of this process is that as there are fewer and fewer private citizens willing to

undertake these tasks, they will gradually be taken over as government responsibilities. And as these responsibilities move up the chain of command from local, to county, to provincial levels of government, you as a citizen in your community will have less and less of a say about how your community is run. When that day happens there are going to be a lot of people who wished they had the opportunity to get involved. Sure, it is going to take some time and effort and is going to mean taking some verbal abuse. But even that would seem to be a much better alternative than being in a position of letting a government administration make the decisions for you. The decision is yours.

Gordon Bachman.



# The Protein Problem

by Professor N. C. Lawson,  
Department of Agronomy

We are presently passing through a very disturbing period in world history. Every day, day after day, we read in our newspapers about "the energy crisis" as the pessimists call it, or "the fuel shortage" as the optimists call it. Elsewhere in the same newspapers we read discussions about the possibility of famine. There is really nothing new about the horrifying spectre of world starvation. Agricultural scientists have discussed it for years while Canadian farmers have gone out of business due to an inability to make an honest living in food production. I am not going to attempt to explain the reasons for this but will confine myself to the protein crisis.

Quebec livestock farmers have been facing skyrocketing prices for their purchased protein for many months. The reasons leading to this grave situation were examined at the Feed Protein Conference held at the Château Frontenac, Quebec City, in November, 1973.

Protein 73 plus was the title given to this imposing gathering of scientists, businessmen, and experts representing many fields and several countries. Mr. Toupin and Mr. Lussier were very much in evidence as also was Mr. Vhelan.

What exactly caused this protein problem? This major question was debated at considerable length. The soybean story is a very important key to understanding what has happened. The ability of the United States to produce a vast volume of relatively low cost soybeans has aided the Canadian livestock producer for many years. We have become very

dependent on this commodity. This vegetable protein is processed by our pigs, broilers, and cows who in turn provide choice animal protein for our relatively affluent Canadian society. A number of other countries have increased their demand for U.S. soybeans. Soviet bloc countries desire to increase the standard of living of their population. The demand from Japan is increasing. New trade arrangements between the United States and the Soviet Union and with China continue to be made.

The Peruvian anchovy fisheries constitute another variable to this story. About 40 per cent of the world's fishmeal originates from this source. Firstly, there was nationalization of formerly U.S. dominated interests. Then catches began to decline. Naturally ocean pollution was blamed, but this is far from being well established as the cause. At any rate the Peruvian Government suspended fishing for most of the season so only limited catches are being taken; hence fishmeal prices shot up.

A third factor that was examined was the weather. The effect of bad climatic conditions in a number of countries can change the supply and demand picture radically from year to year. Economists appear to be divided into two groups. One group believes that increasing demand from an increasing number of countries will mean serious shortages and high prices for producers of vegetable proteins for many years to come. The other group of economists believe that demand for vegetable protein has reached an upper limit and that

currency problems and exchange rates may keep demand down, while one or two excellent crop years for U.S. soybeans would bring the supply up to a level where prices would crash and the protein crop grower would receive little return for his efforts.

Although the United States represents more than half of the international trade in exportable protein materials and Peru with its anchovy fisheries is the second largest supplier, there are other areas to be considered. Brazil is likely to be exporting large amounts of soybeans while increased peanut crops from several African nations are likely.

A factor which enters into the picture is the lack of adequate transportation facilities to supply a rising world demand. Ocean shipping problems might restrict some protein supplies to North America, while a boxcar and lake shipping problem can isolate eastern Canada from its source of supply.

I could go on listing a number of other considerations that together add up to the inescapable conclusion that the era of "cheap" protein inputs for livestock feeding may be at an end. Today's cry is **Self Sufficiency**. Self sufficiency may have a higher price tag associated with it initially but it has dependability of supply as the major consideration.

## Enlargement of Domestic Supply

Let us consider some of the solutions to the protein problem.



Below: Rapeseed is Canada's most important oilseed crop.  
Right: Harvesting soybeans — a scene we hope will become more familiar in Quebec.

## Forage Crops

One immediate solution is for farmers to remember that forage legumes have a high protein content. This protein is readily available for our ruminant population (cattle, sheep, and goats). Operation alfalfa is a Government of Quebec program to increase our present alfalfa area from 360,000 acres to 1,000,000 acres over a period of five years. Alfalfa is not the only high protein legume. Birdsfoot trefoil should be seeded in more pastures in Quebec. This legume has revolutionized pasture production in parts of Ontario and northeastern U.S., but Quebec farmers still hesitate to take the plunge.

## Oleoprotein Crops — Soybean and Rapeseed

In Ontario there are 9,000 farmers producing soybeans. In Quebec there are about none. Soybeans contain 17 per cent vegetable oil and 35 per cent protein. Over the last 20 years production has gone up from four to 13 million bushels. This crop is produced on about 350,000 acres in Ontario. Soybeans have traditionally been grown as a cash crop, but on-farm feeding of whole soybeans to livestock is quite common.

Soybeans must be heat-treated or roasted before being fed to **swine** and **poultry**. The heating process destroys trypsin inhibitors which exist in large amounts in raw soybeans and interfere with the digestion of protein in single stomached animals.

**Cattle** and **sheep** can be fed whole, raw, non-heat-treated soybeans with good results. When mixed in

correct proportions with grain and when ground or crushed, the result is a palatable feed.

Should we be growing soybeans in Quebec? The answer is clearly — yes, but there are problems. We lack adequate heat units to mature the highest yielding varieties. The adapted varieties may yield a mere 20 bushels here compared with the 40 bushels obtainable in southern Ontario. The new factor to take into account is the value of the bushel of soybeans.

Current planning in Quebec calls for a build-up of 25,000 acres over the next five years.

What about the Cinderella crop of the Canadian prairies — rapeseed? Is there any place for in Quebec? Once more the answer is yes. Experiments at several locations have shown that 40-bushel crops can be grown. Some rapeseed is presently being grown in the Abitibi region but owing to the region's soil and climatic conditions yields are generally poor.

Rapeseed is usually processed in oil and meal. Good rapeseed samples have 40 per cent oil and 40 per cent protein.

At the moment there appears to be an exciting prospect for the







potential grower of soybeans or rapeseed in Quebec. The company, Grabec, has plans to build a vegetable seed processing and oil refining plant somewhere in the general region of Montreal. Thus, a local market will exist in the near future.

#### Protein Crops — Peas and Fababeans

In a quest for new field crops for Canada, attention is being focused on some of the oldest cultivated crops of Europe which arrived in Canada with the earliest French-speaking settlers and have continued to be grown in some areas. The field pea can produce a ton of seed with 25 per cent protein. The fababean can produce a ton of seed with 27 per cent protein. In the past these crops have shown unstable yields, sensitivity to unfavourable weather and a strong tendency to suffer from pests and diseases. There is probably a place for them in a carefully planned rotation.

The name fababean has confused some people. The small fababean is the new name for the horsebean. It is closely related to the broad bean which is considered more a garden vegetable than a field crop.

#### Other Solutions

For many years urea has been recommended as an addition to feed for ruminants. A number of nutritionists recommend that increased emphasis should be given to this source of nitrogen. On the other hand, it has been pointed out that this product from the chemical industry may shortly be in short supply and at an increased price. The suggestion has also been made that we should remember that protein levels in wheat and barley are higher than in corn. Perhaps we need to rethink the move to grain corn production, especially in marginal areas.

#### The Future

For some years the petrochemical industries have been interested in **single cell protein (SCP)**. The basic idea is that unicellular organisms such as yeast can be grown on petroleum culture medium. After many years of research it appears that the process is economically feasible. However, the newly discovered fuel shortage has had a sobering effect on those people who were planning to introduce this commodity for livestock nutrition.

One last thought as we continue into the unknown future. Is the future as bleak as some prophets suggest; that is, population numbers will expand faster than food production and distribution capacity can increase? If so, then our present pattern of feeding plant protein to animals for processing into milk, eggs, bacon, and hamburger will surely have to stop. Personally I hope not, but producers beware, the battle has begun.



# Spruce Budworm on Ornamentals

by T.D. Smith,  
Postgraduate Student,  
Department of Entomology.

The spruce budworm (*Choristoneura fumiferana* (Clemens, 1865)) (Lepidoptera: Tortricidae) is native to North America; ranging: in the east from the northern tree limit, Hebron Labrador, to Virginia; westward across Canada and northern United States to the prairies, northwestward to the Mackenzie River Valley, Yukon Territory (Freeman, 1971). The main food trees are balsam fir (*Abies balsamea* (L.) Mill.) and native spruces (*Picea* spp.). In addition ornamental Douglas fir (*Pseudotsuga menziesii* (Mirb.) Franco) and exotic true firs and spruces are readily attacked.

By studying growth rings of trees in the Laurentide Park region foresters learned of spruce budworm outbreaks in 1704, 1748, 1808, 1834, 1910, and 1947. The present epidemic began in western Quebec in 1967 and now covers, to varying degrees, 50,000 square miles (Anon, 1973). Usually the budworm remains scarce, zero to five small larvae per tree, but periodically when food — mature and maturing contiguous stands of balsam fir — and weather — clear, hot spring and summer days — conditions are optimum it becomes epidemic, up to 20,000 larvae per tree. It may take as many as six years under ideal conditions to reach this high a number. Usually the epidemic is ended with the budworm exhausting its food supply. It normally requires from two to three, and from seven to nine, years of excessive to heavy defoliation to cause mortality in balsam fir and spruces respectively. Fortunately, very small seedlings are not eaten and these develop to the next forest. When this forest matures

it, in turn, is killed by the budworm. Thus we have a natural cycle; and the budworm is considered to be the regulator of the spruce-fir forest in Canada.

The budworm has one generation per year. Adult moths (Fig. A) appear from late June to early July. They are about  $\frac{5}{8}$ " long with a wing span of  $\frac{3}{4}$ ". Wings are broad and abruptly widened at the base so resting moths appear bell shaped; forewings are mottled grey, rarely reddish-brown grey, with suffused markings, hindwings and underside of forewings shining grey. Antennae are thread-like (Anderson, 1966). In the last half of July the adults mate and females lay approximately 200 light green coloured eggs, in groups of 15 to 20 in overlapping rows, on the host tree's needles (Fig. B) (Morris, 1963).

The spruce budworm has six larval stages in which the larvae appear as a series of larval forms known as instars. First-instar larvae hatch from the eggs about 10 days after they were laid, and seek a safe hiding place on the tree where they spin a light covering of silk, a hibernaculum, about themselves. They do not feed at this stage but moult to form the second-instar larvae, which hibernate until spring. When the balsam fir buds begin

to swell in the spring the second-instar larvae emerge and begin feeding, mining the needles, buds and male flowers (Fig. C). They develop quickly in their protected habitats and moult to the third-instar larvae. In this and following instars they are too large to mine the needles and the larger larvae become needle chewers eating new foliage. However, third-instar larvae are able to mine the large needles of blue spruce (*Picea pungens* Engl.). As they work, they web the needles together to form a crude shelter or feeding web. Usually the third- to sixth-instar larval period lasts from early June to early July. Fourth- to sixth-instar larvae cause from 70 to 90 percentage of the defoliation.

At first the larvae are pale yellowish green with black heads and thoracic shields (Fig. C). By the time they reach the sixth-instar they become brownish green with white spots (Fig. D), (Table 1).

As the sixth-instar mature they become quiet, stop feeding and form a brown naked pupae (Fig. E) within the feeding web. The adults emerge about 10 days later. A survivorship curve (Fig. F) (Morris, 1963) illustrates both the budworm life cycle and the effect

Table 1. Approximate head capsul width and larval size (modified from Retnakaran, 1973)

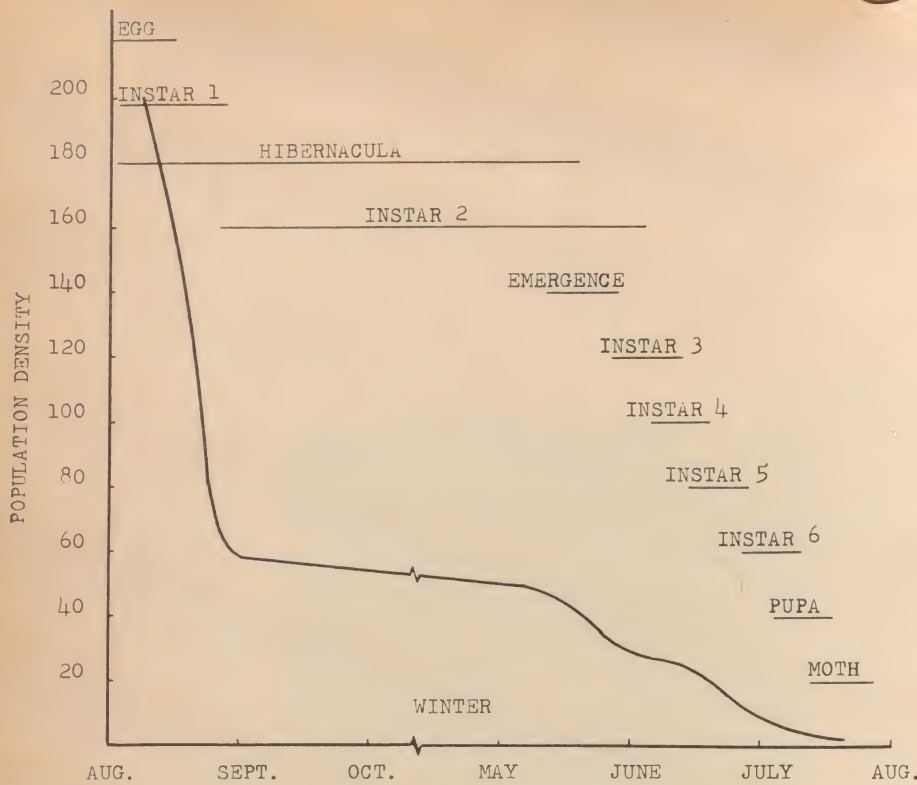
Instar	Average head capsul width (mm)	Approximate larval length (inches)
1.....	0.23	1/8
2.....	0.29	1/4
3.....	0.42	1/2
4.....	0.63	3/4
5.....	1.00	1.0
6.....	1.68	1.0



# SPRUCE BUDWORM







of environmental resistance on budworm population density.

Foresters studying the budworm have developed hazard or sequential tables based on insect numbers relative to food supply. These tables are used to predict the probability of tree death by insect defoliation. The sample unit for budworm sequential tables is the number of larvae per 18" branch tip. Place a long ruler at the branch tip and measure inward 18"; all the foliage in the 18" zone is to be examined for larvae (Fig. G).

Sequential tables for balsam fir (Table 11) and spruces (Table 111) are as follows (Kettela, 1973).

An ornamental owner will be able to predict the population density of budworm on his tree by using the sequential table. The second-instar larvae are difficult to find, look closely for small tufts of silk coming out of a small hole in the side of a needle (Fig. C) or at the base of a bud. Mined portions of a needle are hollow and appear white. If no larvae are seen examine another branch. For example, if you are examining the third branch of a balsam fir and have seen a total of five larvae, continue sampling for five falls between 2 and 43 in the sequential table. If

on the fourth branch you find one larva giving a total of six, the budworm density is low on your tree for six falls below nine in the sequential table. Repeat this procedure about one

week later. Ideally the samples should come from the top and middle parts of the tree crown. If you are in doubt about the identification of the larvae, or any other insect, on your tree carefully remove the larva and place it with sufficient new foliage in a small cardboard box and mail them, first class, to the Insectary of the: Canadian Forestry Service, Laurentian Forest Research Center, 1080 Route du Vallon, P.O. Box 3800, Ste. Foy, Quebec 10, Quebec.

Table II. Sequential table for spruce budworm larvae on balsam fir

Number of 18" branch tips examined	Density is low if the cumulative number of larvae is equal to or less than	Density is high if the cumulative number of larvae is equal to or more than
1	—	28 or more
2	—	36 or more
3	2 or less	43 or more
4	9 " "	50 " "
5	16 " "	58 " "
6	24 " "	65 " "
7	32 " "	73 " "
8	39 " "	80 " "
9	46 " "	88 " "
10	54 " "	95 " "

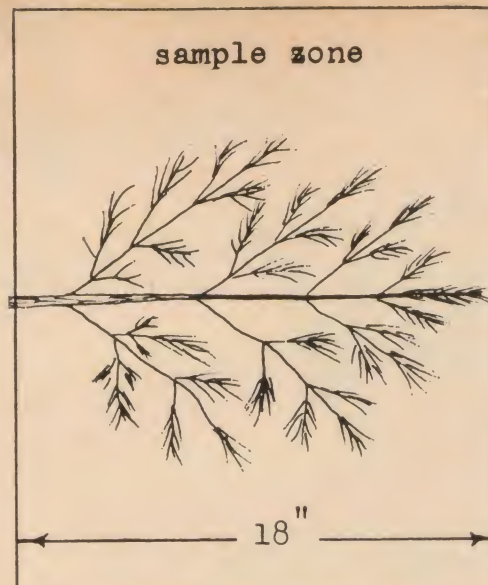
If the cumulative number of larvae seen falls between low and high, continue examining 18" branch tips.

TABLE III. Sequential table for spruce budworm larvae on spruce

Number of 18" branch tips examined	Density is low if cumulative number of larvae is equal to or less than	Density is medium if cumulative number of larvae is equal to or between	Density is high if cumulative number of larvae is equal to or more than
1	—	—	34 or more
2	—	—	47 " "
3	3 or less	—	60 " "
4	7 " "	23 — 30	74 " "
5	11 " "	27 — 43	87 " "
6	16 " "	32 — 56	101 " "
7	20 " "	36 — 69	114 " "
8	25 " "	40 — 83	127 " "
9	29 " "	45 — 96	140 " "
10	33 " "	49 — 109	154 " "

If the cumulative number of larvae seen falls between low and medium or between medium and high, continue examining 18" branch tips.





air currents, in warm, dry nights the last half of July in 1971 and 1973, have carried large numbers of adult moths from the Laurentian spruce-fir forest to Montreal Island.

These adults will lay eggs on ornamental spruces and firs. Usually the introduced population declines significantly in the second year after immigration. If high densities of third-instar larvae are present, determined from the sequential table, spray as soon as the needles are flaring. However, the fourth-instar larvae are more easily killed being larger and more exposed. Spray again one week later if the first insecticidal treatment was unsuccessful. Smith (1973) recommends two insecticides for budworm control on ornamentals: Dylox 80 S, if available, and Malathion 50% nulsifiable concentrate (Table IV).

two years of heavy or excessive defoliation (Fig. H); moreover, pesticides are poisons and may do more harm than good. Insecticidal application may cause conditions favourable to the spruce spider mite (*Oligonychus ununguis* (Jacobi)) and other insect attack.

Healthy trees will resist death from defoliation by using stored food. A low application of evergreen fertilizer in August would be beneficial for lightly defoliated trees.

The spruce budworm has a major dispersal period in the spring. After emerging from the hibernacula in the spring many of the second-instar larvae crawl to branch tips and spin a long silk thread. The thread caught by the wind carries the larva away. Moderately disturbed larvae will drop, via a silk thread, to the ground, where they die, or to lower branches. Larvae can be knocked off the foliage by beating the foliage with a pole. Native insect-eating birds:

Infestations can be retarded to some extent by washing the tree, from top down, with a strong stream of water from a hose. This breaks the feeding webs and disturbs the larvae.

It is most likely that the spruce budworm is here to stay on Montreal Island. One must remember that the environment of an ornamental is vastly different from that of a forest tree. Montreal Island's population of spruce budworm is unable to develop sufficient large numbers to kill ornamentals, even though light defoliation will always be present.

For Christmas tree growers, woodlot and cottage owners beside or in Quebec's spruce-fir forest the situation is much more complex. These people should form local associations and contact their regional forester or write to the Laurentian Forest Research Center.

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Table IV. Insecticides for controlling spruce budworm on ornamentals (Smith, 1972).

Formula	Insecticide	Quantity of insecticide required for	
		1 gallon	10 gallons
Hydraulic sprayer	Dylox 80 S	1-¼ tablespoons	2 oz.
	Malathion 50% EC	2 teaspoons	4 fl. oz.
Mist blower	Dylox 80 S	1 oz.	2-½ oz.
	Malathion 50% EC	2 fl. oz.	5 fl. oz.

ilute sprays are applied with a hydraulic sprayer and the foliage must be wetted completely to obtain adequate coverage. However, no attempt should be made to wet the foliage with concentrated sprays which are applied with mist blowers. Malathion 50% EC should only be used above 65°F.

is the exception rather than the rule to use insecticides for controlling budworm on ornamentals. Insecticides should only be used to keep trees alive after one or

warblers, song and swamp sparrows, readily feed on available larvae. These and other insectivorous birds should be encouraged, especially by blue spruce owners.



# The Family

# Farm

Published in the interests  
of the farmers of the province  
by the Quebec Department of  
Agriculture

## THE QUEBEC DEPARTMENT OF AGRICULTURE AND THE LIVESTOCK FEED PROTEIN PROBLEM

(Notes for an address given by  
The Honourable Normand Toupin,  
Minister of Agriculture of Quebec,  
at the conference on feed protein  
held at Quebec City on November  
8 and 9, 1973.)

I am very glad that the Quebec  
Department of Agriculture, in  
collaboration with the Canadian  
Livestock Feed Board, has been  
able to help organize the Confer-  
ence which begins this morning.  
At the outset, I should like to  
thank all those who have consented  
to participate in it in one way or  
another. I am fully confident that,  
with the enlightened cooperation  
of all the specialists gathered here  
— the economists, scientists,  
representatives of agriculture,  
industry and trade — we will, by  
the end of this conference, reach  
realistic conclusions which will  
form the basis of the answers to  
the thorny problems that have led  
to these sessions.

You are, of course, no strangers  
to the question of livestock feed  
protein and I do not intend going  
into the details. I merely wish to  
mention certain aspects in order to  
provide a background to my  
remarks. These remarks will mainly  
concern the steps which have been  
taken in Quebec to circumvent, at  
least partly, the serious difficulties  
which scarcity of protein causes  
Quebec farmers — whose income  
is largely derived from livestock  
productions. Even though we are  
tackling here only a small part of  
the overall problem, I venture to

think that my brief remarks will  
shed some light on the one  
before us.

### World problem

As already mentioned, the problem  
of protein supply is world-wide.  
The dearth of fishmeal and the  
growing need for protein in human  
nutrition have lately overtaxed the  
ordinary plant sources of protein  
for livestock. This has led, in  
particular, to the fantastic rise in  
soybean prices in recent months.  
All things considered, taking in  
account the protectionist measures  
adopted by the United States —  
the leading producer of plant  
protein — it is harder to supply  
world demand for protein than  
for feed grain.

### The Canadian situation

Canada is an importer of proteins.  
Each year it has to buy on the  
outside market, in the form of  
meal (261,000 tons) and of beans  
(446,000 tons) the equivalent of  
700,000 tons of soya (1969).  
Despite a rapid increase in Ontario's  
production, these imports still  
showed a 5 per cent increase in  
1971 over those of 1969. Naturally  
our neighbours to the south are  
our big suppliers — in fact to the  
extent of 90 per cent of Canada's  
soya imports. Canada as a whole  
is thus in large part dependent on  
the outside market for its soybean  
supplies.

### The situation in Quebec

Quebec is no less dependent on  
outside sources to meet its protein  
needs. Besides the brewers' and  
distillers' dried grains, meat meal,  
fishmeal and milk by-products, in  
the case of which a good part of  
our livestock's needs are met  
from local sources, we have to  
buy over 150,000 tons of soybean  
meal a year from Ontario and the  
United States. We also have to  
rely on 50,000 tons of rapeseed  
meal from Saskatchewan. Thus  
Quebec farmers are at the mercy  
of international price fluctuations  
and exposed to all the risks of an  
insufficient protein supply for  
their livestock.

As I mentioned earlier, Quebec's  
agriculture is based on livestock  
productions. After years of hard  
work, we have succeeded in  
developing healthy livestock of  
high genetic quality. Quebec live-  
stock can easily stand up to foreign  
competition. We therefore have  
quite good control over two of the  
three main factors needed for a  
successful livestock industry. We  
now have to master the third —  
feeding. In that field, we still lack  
certain resources, mostly in the  
protein sector.

As much as possible, we must  
find these resources in our own  
crops. We know that the potential  
of our arable land is limited and  
that this land must therefore be  
put to better use than it has been  
so far. Our grassland totals over  
five million acres but its yield is  
comparatively small and the hay



Alfalfa is an excellent pasture legume where management is above average. It will not survive close frequent clipping.

of average quality with a rather low protein content. We have also about 700,000 acres in oats, a grain which is not very high in total digestible nutrients. It is therefore up to us to improve the quality of our crops by replacing traditional plants with

others richer in nutrients, and especially in proteins.

#### **The Quebec Department of Agriculture's program**

The program which has been designed with that aim in mind is already being carried out. It is

focused to a considerable extent on increased protein content of crops.

#### **Alfalfa**

Since forage always plays a leading role in cattle feeding, we favour alfalfa as a high-protein forage





plant. So far, results have been very encouraging. About 600 farmers are already taking part in our "Operation Alfalfa". This year's alfalfa seedlings in Quebec are 40 per cent larger than last year's. Where it is possible to make three cuts, yields of up to 4.5 tons per acre have been obtained, as compared with two tons or less for traditional forage plants. By 1978 we expect to increase our alfalfa area by 300,000 acres and thereby increase our local protein sources correspondingly.

### Soybeans

A second, very important point in our program is expanded soybean production. Historically speaking, the cultivation of this crop has not become widespread in Quebec, mainly owing to lack of milling facilities. Under such conditions, farmers could use only a small percentage of it in feed rations and very few of them were interested, and then only to the extent of small acreages.

Well aware of this weakness in our secondary structures, we have striven to correct it and are now very close to success. A factory for extracting soybean and rapeseed oils is at last to be built in Quebec and will allow us to take our place in the era of the soybean — a crop which is now being snatched up at exorbitant prices because it has become the main source of protein for the livestock industry, and is estimated to be grown on 46 million acres throughout the world.

Thanks to these new facilities, we are confident that our present

approximately 2,000 acres in soybeans will increase rapidly. It is quite reasonable to think in terms of growing 300,000 acres of oilseed crops in Quebec by 1978.

### Other high-protein crops

We are also endeavouring to spread rapeseed production to regions where the growing of this crop is economically advisable, that is to say where land is not too high-priced. Some success has already been achieved with it in Abitibi. Extensive studies have also shown possibilities for rapeseed growing in areas other than those suitable for corn and soybeans. If, as expected, the aforesaid oil mill is built in the south-of-Montreal region, it is considered that a good part of the north bank of the St. Lawrence, perhaps as far eastward as Trois-Rivières, would be suitable for rapeseed growing.

Meanwhile, again with the aim of making us less dependent for our protein supply, intensive research and trial work has been undertaken with field beans, a little-known crop with us but one which seems to offer possibilities of adaptation and worthwhile yields.

This then is how we of the Quebec Department of Agriculture propose to make an appreciable contribution to the solution of protein supply problems in the livestock industry. In encouraging the growing of high-protein crops, we have two principal aims: to make our supply situation more secure and, at the same time, to improve the competitive position of our farmers on the different markets. The light which will be thrown on the

subject of feed proteins at this conference will surely help us to pursue our aims, just as it will, firmly trust, contribute to the well-being of every Canadian farmer.

### Feed Protein Conference

(Notes for the opening address by Mr. Gaétan Lussier, Deputy Minister of Agriculture of Quebec at the Feed Protein Conference in the Château Frontenac, Quebec City, on November 8 and 9, 1973).

I have the honour to declare Feed Protein Conference '73 open. Livestock feed protein — always a matter of prime importance — has recently become a burning issue.

This conference is the outcome of a meeting between the Canadian Livestock Feed Board and the Quebec Department of Agriculture. At that meeting it was decided that the time had come to set in motion the organizing which has led to the study days that are starting this morning. The subject we are to discuss includes all the difficulties in livestock feeding that we have already been facing for some time and which cause the farmers much concern.

But this time, we are not dealing with merely local or regional problems; this is a world-wide state of crisis brought about by bad weather conditions in large areas in several parts of the world. Disastrous droughts in Russia, India, Australia, and Africa greatly



duced cereal, sunflower, and  
nut crops, and Asia has had  
or rice crops. At the same time,  
cessive spring rainfalls delayed  
eding and seriously reduced  
ps in the Americas, greatly  
inishing important plant sources  
protein such as soybeans. If, to  
this, one adds the decline in  
Peru fishmeal industry owing  
the disappearance of the  
hovies which are now out of  
ge of the fishermen for an  
known period, one has the main  
tors which have contributed to  
present scarcity in the field  
livestock feeding.

s decline in sources of supply  
s been accompanied by a  
adily growing demand for farm  
ducts. World population is  
reasing at the rate of about 80  
lion a year and, at the same  
e, is constantly attaining a  
her income level that permits  
dietary improvement in which  
teins play an increasing part.

s thus not surprising that the  
ted States and Canada have  
n forced to restrict exports in  
er to protect domestic supply  
urces — to the great surprise and  
may of importing countries.  
eed, the protectionist measures  
applied represent a complete  
ersal of previous situations  
ich prompted exporting countries  
grant sometimes exaggerated  
efits to expedite the sale  
surpluses.

these factors have led to a  
keting of prices which has  
ly shown us how vulnerable  
are and how urgent it is for

us to scrutinize every facet of  
the problems we face and find  
concrete and effective solutions  
to them. It is therefore important  
to study closely the situation that  
has recently developed, grasp all  
its implications, and assess the  
long-term prospects for the  
Canadian livestock industry.

In the program outlined for you,  
an effort has been made to take  
into account the diverse and  
multiple aspects to be considered  
and thus meet the needs of a  
study that must be as thorough  
and comprehensive as possible.  
The subjects for discussion are  
grouped under specific themes.  
This plan should help us to pin-  
point the weaknesses of our  
protein supply and their conse-  
quences on the Canadian market.  
It should also enlighten us about  
new sources likely to make a  
worthwhile contribution to  
that supply.

To deal with these matters, we  
have called upon specialists of  
repute in Quebec and Canada, and  
internationally known experts from  
elsewhere like Dr. J. C. Abbott  
of the F.A.O., Dr. T. A. Hieronymous  
of the University of Illinois, and  
Dr. Quentin West of the Secretary  
of State Department of Agriculture  
of the United States.

I share your pleasure in the fact  
that we are able to entrust this  
meeting to authorities whose  
participation ensures that this  
conference will be beneficial to all  
and can pave the way to an early  
arrival at sound solutions.

To all our guests I extend a most  
cordial welcome and I am sure  
that your stay here will be pleasant  
for all of us and valuable for  
Canadian agriculture.

#### **Standards Farms Saguenay-Lake St. John Zone I-II-III**

In order to improve Quebec agri-  
culture, it is necessary for farmers  
to be able to refer to technical  
and economic data closely related  
to the bio-physical possibilities  
of their region. Unfortunately such  
information is not always available.

In view of this, the Quebec  
Department of Agriculture is  
organizing a network of standards  
farms under the Arda III agreement.  
The aims of these farms are  
as follows:

- to obtain the data needed to  
establish standards for existing  
agricultural productions in a region;
- to find and try new methods  
and productions with a view to  
arriving at norms with a view to  
adoption locally;
- to make known the results thus  
obtained via mass information  
media, GERA (farm profitability  
study) groups, and through meet-  
ings organized with interested  
farmers. The importance of the  
GERA groups in this context will  
be understood when it is pointed  
out that, as far as possible,  
standards farms will be chosen  
from those involved in them.



## 1. QUALIFICATIONS

Candidates will be chosen on the basis of very precise personal qualifications and very specific criteria as regards the productive apparatus of their farms.

### A. Personal Qualifications

- The farmer must be a producer within the meaning of the Farm Producers' Act;
- must have a sound social, technical, and administrative background;
- must be reasonably young or at least be sure of having someone to take over to ensure continuity of the enterprise;
- have a positive attitude to change;
- be communicative and available;
- be ready to receive visitors;
- be able to cooperate in the gathering of data and the keeping of records and to agree to carry out certain recommended improvements; keep accounts (CIAGA or CANFARM);
- be recognized as a leader or influential member of his community in order to be in a position to get the practices followed on standards farms more widely accepted and adopted;
- agree to an examination before a jury of three to five members;
- agree that, if it is in the interests of farmers, the Department may make public the data collected on his farm;
- be the owner of his farm, without any restrictive clauses or, if he is the tenant, have a lease for at least six years counting from the date of signature of the

undertaking, and (in order to permit the carrying out of the project) one without any restrictive clauses;

- in the case of a farm operated jointly by two or more persons, the above-mentioned requirements need not all be satisfied by each of them.

### B. Farming Apparatus

- must be typical of the production zone as regards the trends called for in the development plan;
- be typical with respect to the production(s) it is desired to promote or introduce;
- be typical in relation to the production facilities of other farming enterprises already launched in the same type of production;
- be so situated as to have available the resources required for reasonably rapid development of the facilities conducive to optimum production.

## 2. APPLICATION

Farmers interested in applying must do so on the Department's official form at the local agricultural office.

## 3. SELECTION PROCEDURE

Upon receiving the forms, the Department's representatives will visit and judge the candidates' suitability.

Candidates will be chosen by a selection committee whose decision will be final.

## 4. REMUNERATION

Operators of standards farms will be paid in two ways:

1. A fixed sum of \$50 a month in return for access to the operator's accounts and other information needed to carry out the project;
2. A varying account based on value of land and buildings and on additional operations required of the operator to carry out sub-projects;

This second form of remuneration is reckoned in relation to the specific budget for each sub-project (alfalfa, barley, silage, and drying trials, etc.).

## 5. PAYMENT OF GRANTS

The above grants are paid to the farmer upon presentation (if required) of vouchers and after verification and approval by the Department's authorized representative.



# QWI

Mrs. J. W. Westover, Provincial President of the Quebec Women's Institutes, came to Macdonald College in early November. While there we arranged for a taped interview. Mrs. Westover's comments were, we feel, of sufficient interest to warrant devoting most of the W.I. section in this issue to them. We felt, too, that this should be an excellent opportunity to let you to get to know your President a little better. Here then is an edited version of that interview.

*Mrs. Westover, why did you join the W.I., and where were you when you first joined?*

I was a newcomer to Canada about 15 years ago — a war bride from England. We had lived for seven years in the United States where my husband's family had settled, but he had joined the Canadian Army and decided that he would be happier farming in Canada. We bought a farm in Abercorn in Brome County, which is about 10 miles from where I now live. Naturally being a stranger in the area I didn't know too many people and, being a farmwife, I decided the best thing to do would be to join the Women's Institute.

Very often my husband couldn't leave his duties to take me and, rather than miss the meetings, I walked three miles. He always managed to pick me up, though.

*Could you tell us about the different offices you have held and, in particular about your work during EXPO '67?*

I think I have held most every convenership at the branch level

that it is possible to hold, and I acted as Secretary both at branch and county level. I was County President for two terms with two years in between. During EXPO I was Provincial Convener of Citizenship and International Relations and the Executive conceived the idea of having a two-way relationship between W.I. members in different countries and W.I. members in Canada and getting accommodation for them. I undertook to handle this, and before I had finished I had made accommodations for about 35,000 women from all over Canada, Australia, the United States, and other parts of the world. I still have about 80 pen pals that I receive at least a Christmas card from as a result of this. The majority stayed around Hemmingford, Lachute, and the Eastern Townships. One girl in particular, who lived in Greenfield Park but was a member of a branch in the Eastern Townships, had people the whole time EXPO was on. As a result of this work we made many new friends from all over the world.

I enjoyed all my convenerships, particularly Welfare and Health because I am an R.N. I trained at Guy's Hospital in London, England, as did my mother before me and my grandmother before her. And I have a daughter who is an R.N. so it is all in the family.

*Before we get to your position as President, which I'm sure takes up a great deal of your time, could you tell us something about your favourite hobbies or pastimes?*

One of my favourite hobbies is raising African violets, which I have

been doing for about 35 years. My daughter gave me my first one which the florist said I should just throw out after it had finished blooming. Instead I wrote to the Department of Agriculture to find out how to take care of them. They advised me on how to take the leaves off and root them and thus get new plants, and from then on I have never stopped. I have never shown any in African violet shows but I have given plants to friends who have shown them and won prizes.

*You once mentioned to me that you have a great many birds around your property.*

Yes, I have 18 bird houses and they are occupied winter and summer. If any one doesn't have birds around they don't know how interesting they can be. I watch for the swallows coming back every year. The houses are all occupied, but then there is a "war" and the swallows always manage to get two or three houses. After the little ones are hatched, they all gather on the clothesline — mothers, fathers, and little ones — and chatter away to each other.

In the winter I have every variety of woodpecker, even the pileated woodpecker, because I keep suet around everywhere. I have grosbeaks, cedar waxwings, nut hatches, etc., and in February the red polls all come back. About 50 of them stay for about two or three days and then head North. I have one or two blue jays, but I try not to encourage them because they take the seed away from the little ones. There are 52 varieties of sparrows and I have a great many





When not busy with Women's Institute duties, Mrs. Westover relaxes by raising African violets and feeding the many birds that flock to her property.

of them, even the little tiny chipping sparrow that is only about three inches long.

If I'm away, I make arrangements for somebody else to feed them. I buy commercial feed and very often go to the grain store and buy sweepings which I mix with the regular bird seed.

*What about travelling?*

I have always loved to travel. My husband said I should have been a gypsy just going from one place to another. My husband was an invalid during the last seven years of his life so I couldn't travel, but since he passed away three years ago, I have done a great deal of travelling. I have been to England three times and to the Continent, including the Scandinavian countries. I was out West this summer for the Federated Women's Institutes convention. I travelled around Quebec when I was 2nd and 1st Vice President. We always used to visit the counties every spring but with the annual convention being held earlier we find we cannot get to as many as we would like to. I am hoping the day will come when we can continue our visits again.

*Could you tell us some of the things you have done since becoming President this year?*

I have attended the regular executive meetings about every two months and I have been with the Secretary to sort out different things in the office. I've been to about three 50th anniversaries in the last two weeks. Our own in Sutton was one, and I've been to Huntingdon and to Riverfield. I have presented some 50-year bars to members — one in particular to a Mrs. Bruce, a delightful, charming lady, 95 years old. She was just wonderful and still takes part in the activities of the branch.

I have written a brief on Canada's immigration policy for F.W.I.C., worked on changes in the bylaws, and I have written about 300 letters since May.

*Why are you visiting the College now?*

I came to award the prizes and the Quebec Women's Institutes bursaries to the three winners at Macdonald College — Beverley Bonnett from Granby, Margaret Jones, and Thomas Walsh from Huntingdon. They were charming

young people, all of them. I had the pleasure of sitting at the table at the banquet with them, and I got to know them quite well.

*What do you think a woman is looking for when she joins an organization?*

I think a great many of them are looking for companionship. They may be lonesome. Many of them have younger children and, if the meetings are held at night, they can go to them and their husbands can babysit. We find in the Women's Institute that the women are interested in the homemaking courses and they are interested in handicrafts. We have three contests a year and they are very popular. But I still think that meeting with other women in the community is a strong reason for joining an organization.

*The entire F.W.I.C. has had a campaign for new members. In particular, how is the W.I. attracting younger members?*

If I may speak for my own branch Sutton, most of our younger members at present originally came from Europe. We have two girls from Holland, two from Germany, two from Switzerland, and one from Belgium. They keep up their handicrafts in those countries much more than we do. They are all so interested in our Canadian handicrafts that they want to learn and they in turn are teaching us what they can do. In fact, one of them brought a picture of a cottage with a hill behind it which was made just like a patchwork quilt with all the pieces sewn on. We decided that this would be one of our exhibitions next spring.



in this way we try to attract younger members to offer them something new. We can all learn from each other.

*...erving the community — is this something a younger person is open on doing?*

s, I find younger members very interested in many things in the community and in helping in clubs, Brownies, school activities and so on.

*...n young women and older*

*women work together? What can each learn from the other?*

They certainly can work together. This has been proven in a good many cases but there has to be some give and take on both sides. I always get along well with very old people and very young people. There is no generation gap in my thinking, but there are some who find it difficult to accept either the young or the old. Younger people can learn a lot from older members. They can teach them a lot about quilting, making knitted articles, weaving and all the money-saving

projects our older members are very proficient in. Older members can learn a lot from the younger ones who have so many new ideas. They're just full of ideas and enthusiasm. Some of the older member are getting a little tired and, after 50 or 60 years of being a member, they may have run out of new ideas. Younger members can give them new incentives to work and different things to work on.

*Are there any areas in the province where you would like to see the W.I. started?*

Many, many areas. We have discussed going to the Magdalen Islands. Women there have been in correspondence with members in the Gaspé and would like to have a branch formed and, if possible, I would like to go there and help them start a branch. I think that if one was started, there would soon be two or three more. We have also tried to form branches on the North Shore but the population there seems to be always on the move. They just get started when the president or some of the officers move and the branch kind of falls by the wayside. I think there is room for more branches even in the areas where there are some now. I have tried in the past when I was provincial convener and county convener but the difficulty was getting the younger women interested. The older women were very interested but some didn't feel that they wanted to take office.

*What is the membership of an ideal branch?*







As Provincial President of the Quebec Women's Institutes, Mrs. Westover recently attended the 50th Anniversary of the Huntingdon branch. She is seen here with Mrs. Tilly and Mrs. Jamieson.

It varies. Many have from 20 to 25 members. We have 43 in Sutton. We have gained about 13 new members in the last two years and we are very pleased about this. And we have one branch in Brome County that has eight members. They're still paying their commitments to the Q.W.I. and still carrying on. So size shouldn't be a deterrent to a group of women who might like to form a branch.

*I believe you are extremely interested in the welfare of senior citizens. Can the W.I. help more in this area?*

Yes, they can. There are many senior citizens who are confined to the house and never get out. If they could be telephoned once or twice a day it would be a wonderful gesture. Once in a while W.I. members could take them a hot meal, perhaps on their birthday, or Thanksgiving, or Christmas. They could pack boxes for them and go and visit them to just sit and chat. It is very difficult to visualize being confined to one room and one chair, but there are many W.I. members who are in that position — and not only members but citizens of the community who should be visited. They are always so pleased.

I have the welfare of the senior citizens very much at heart. I have a great respect for very old people and I think they deserve every consideration and everything that can be given to them. The older person is part of our national wealth. Discarding them is like throwing away an investment of hundreds of thousands of dollars.

*How can the Women's Institutes keep up with changes in the rural areas and what action, if any, is needed?*

There is plenty of action needed. In the past we had technicians and demonstrators working for us. Now I feel we have to look for ability among our own members. We have many talented women in our own groups who could pass their talents on to others. I think we must learn to make more use of our own members than we are doing.

We have tried to keep up with the times, but I would say that we have more competition today with television, automobiles, curling clubs and so on than we did when the W.I. first started. However, our competition just makes us try harder and we do succeed.

One of our great difficulties, for example, lies in the great distances between our branches and between many of our branches and good speakers. It is nearly impossible to ask a speaker to travel 50 to 100 miles to give a speech. And after a few years you have asked just about everyone in your own community. Again, I think, we have to come up with speakers from within our own organization. Some members that travel can talk about the countries they have been to, for example.

*Have you any suggestions for making programs more interesting?*

It takes a great deal of thought and planning and coming up with new ideas. For example, painting

is very satisfying. More and more women are taking up painting, and if a member knows anything about painting she could offer to give a demonstration and help the other women get started. Braiding rugs is another handicraft that we are trying to revive in Quebec. We want to keep the old handicrafts to the front as much as we can, and it is surprising the number of women that have started braiding rugs. They find many of their materials by going to rummage sales. We are trying to revive the old patchwork quilting which is now very fashionable. I was amazed in Montreal the other week to see a lady walking along the street wearing a patchwork coat made of many colours. I hope this continues because one can use materials that would otherwise go to waste.

A point I might make here — I think the business part of the meeting should be conducted in a business-like way without people chatting through it. Motions should be made, seconded, carried, and recorded by the secretary. Minutes should be kept well and up-to-date. This part of the meeting is as important as the social time which comes later.

To help improve meetings and programs a good idea is to have contacts with branches in other provinces and other countries. In this way you can exchange programs and get new ideas. I have brought programs home from countries I have visited — and from our own branches — and we have used some of their programs in ours and it gives a different aspect to the meeting. It helps to have pen pals in other provinces.



every province has an office and you write to them they will give you names. Roll calls, for example, can be educational and fun. Take time to look at the roll call for the month, study it and give a suitable answer instead of simply saying present. The roll call at the last meeting we had in Ontario was what was your greatest cooking failure. Everybody answered and it made for a great deal of fun.

*Will you tell us yours?*

When I was first married I was determined to be a good wife and a good housekeeper so I said I was going to make my own bread. I had never seen bread made before or knew anything about it but I made it, all the while thinking it didn't look like very good bread. It was very heavy, but I put it in the oven and baked it. Well, when it came out it would have made very good cement blocks. My husband said, never mind. We won't waste it; take it out and feed it to the pigs and you try again."

The next morning he came in looking downcast and with a long, sorry face. I said, "Whatever is the matter?" He said, "The pigs are all dead." "Oh," I said, "my goodness, that must have been very bad bread; it's a good thing we didn't eat it." Then I looked at him again and he had a glimmer in his eye and a glint, and I knew that he was just fooling me. The pigs weren't dead at all!

*What kind of farm did you have?*

A general farm. We had cows, pigs, and hens and grew grain and our

own hay, and we sold milk and cream.

*From your own point of view what can a member do for W.I. and what can W.I. do for a member?*

It is certainly a two-way street. The W.I. can teach a member a lot of things if she is willing to learn, and a member likewise can learn if she is willing to listen. I am amazed when I think back over the 75 years and see what a foundation all the past members made for us in the Women's Institute. When you think that one woman in Stoney Creek, Ontario, started this movement because she had lost her little son from drinking impure milk and was determined to make things easier for other women — and from that one woman, Adelaide Hunter Hoodless, we now have Quebec Women's Institute members, Women's Institute members in every province in Canada, Women's Institutes in 69 countries in the world and eight million members. She has certainly left a heritage for Women's Institutes to keep up, hasn't she. It is because of this heritage that I urge all the members to try and gain new members. We had a membership drive last year — it isn't finished yet; we're going to keep on. We gained quite a few members; we lost quite a few through death and moving away, but if every member determined every year that she will bring in one new member, we will double our ranks very quickly and this is what we need. Keep up the good work and get new members.

*What do you feel about the value of publicity?*

I think publicity is one of the vital lifelines of any institution or any organization. Publicize what you are doing and when you are going to do it. The Journal is of particular interest to me. The minute it comes in, no matter what I am doing, I immediately sit down and read it from cover to cover. I read what the other branches are doing and what they are accomplishing. We gain many new ideas from the Journal. Those that have the privilege of radio time are making excellent use of it. And many of the daily newspapers devote many pages to Women's Institute news and activities. (I think some might have to close down if it weren't for W.I. news!) Publicity is very vital to every one of us.

### Branch Program Suggestions

**Speakers:** Policeman, his problems; Instructor, defensive driving; Agronomist, farmer's side of high food prices; Editor, newspaperman's problems; Teacher, changing role of teachers; Lawyer, some things a layman should know; Bank employee, banking tips, deposits, etc. Accountant, household accounts, budgeting; Repair man, care of household appliances; Fireman, fire extinguishers; Mechanic, car care tips, how to save on gas; School nurse, nutrition and malnutrition among school children.

**Other Topics:** Debate on Capital Punishment; Discussion on advertising; Demonstration on using leftover pieces of polyester, knits, etc.; Demonstration by grandmothers on ways they "used up most everything"; History of our



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**Tours:** Court in session; firehouse town hall; municipal council meetings; local hospital; art exhibits; community centres.

**Roll Calls:** Nutritious, low-calorie recipe; The time I was gypped; A practical, educational, or social advantage the W.I. offers; Why women should or should not be on school boards, in politics, etc; What I like about women's lib; television, radio; Are officials too lax with criminals?; Stretch-sewing tips; I wish I knew how to do . . . ; Did you know that . . . ; I remember . . . ; A need in our community; An event in our community in past years; a child's question I could not answer; Come representing a country; What I learned from a New Canadian; A cause for concern. Mending hints; An advantage of being a woman; Health hazards in our homes; Substances with unsuspecting toxic effects; Vitamin in my food today; An old cure approved by doctors today; Something good our provincial government is doing; Item of good news from newspaper, magazine; A proverb.

**Contests:** Each member write a year's program (minus motto), 5-10 minutes; Arrangements of grasses, leaves, flowers; Largest variety of pickable summer and fall wild flowers; Handmade greeting card, corsage, decoration, wall plaque, wrapped parcel; Neatest collar; Best bound button hole; Original quilt pattern; Bulbs seeds, African violet leaves, etc. given out in spring and judged later in year; Knit a four-inch square for an afghan; Salads, breads, cookies, pickles.

**To raise money:** A knit-a-thon. Money donated to a cause for every inch knit on a sock.

Mrs. Perley Clark,  
Q.W.I. Publicity Convener.

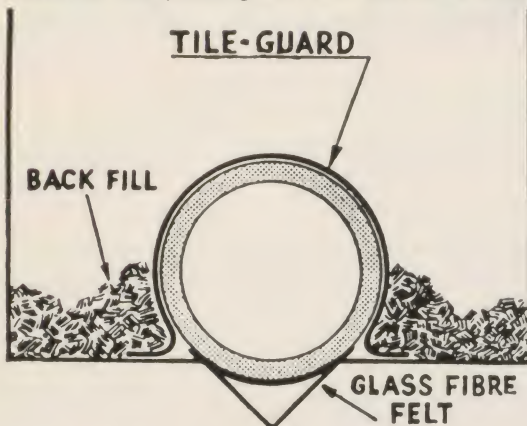


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